West Nile virus and other arboviral activity -- United States, 2012
Provisional data reported to ArboNET
Tuesday, June 19, 2012

This update includes provisional data reported to ArboNET for **January 1–June 19, 2012** for nationally notifiable arboviral diseases caused by West Nile, Eastern equine encephalitis, La Crosse, Powassan, and St. Louis encephalitis viruses. Dengue cases are reported in a separate update available from the CDC Dengue Branch. For additional information about ArboNET and arboviral disease resources, see page 8.

West Nile virus (WNV) activity in 2012

As of June 19th, 90 counties from 11 states have reported WNV activity to ArboNET for 2012, including two states with reported WNV human infections (i.e., disease cases or presumptive viremic blood donors) and nine additional states with reported WNV activity in non-human species only (i.e., veterinary cases, mosquito pools, dead birds, or sentinel animals) **[Figures 1 and 2]**.

Figure 1. West Nile virus (WNV) activity reported to ArboNET, by state, United States, 2012 (as of June 19, 2012)
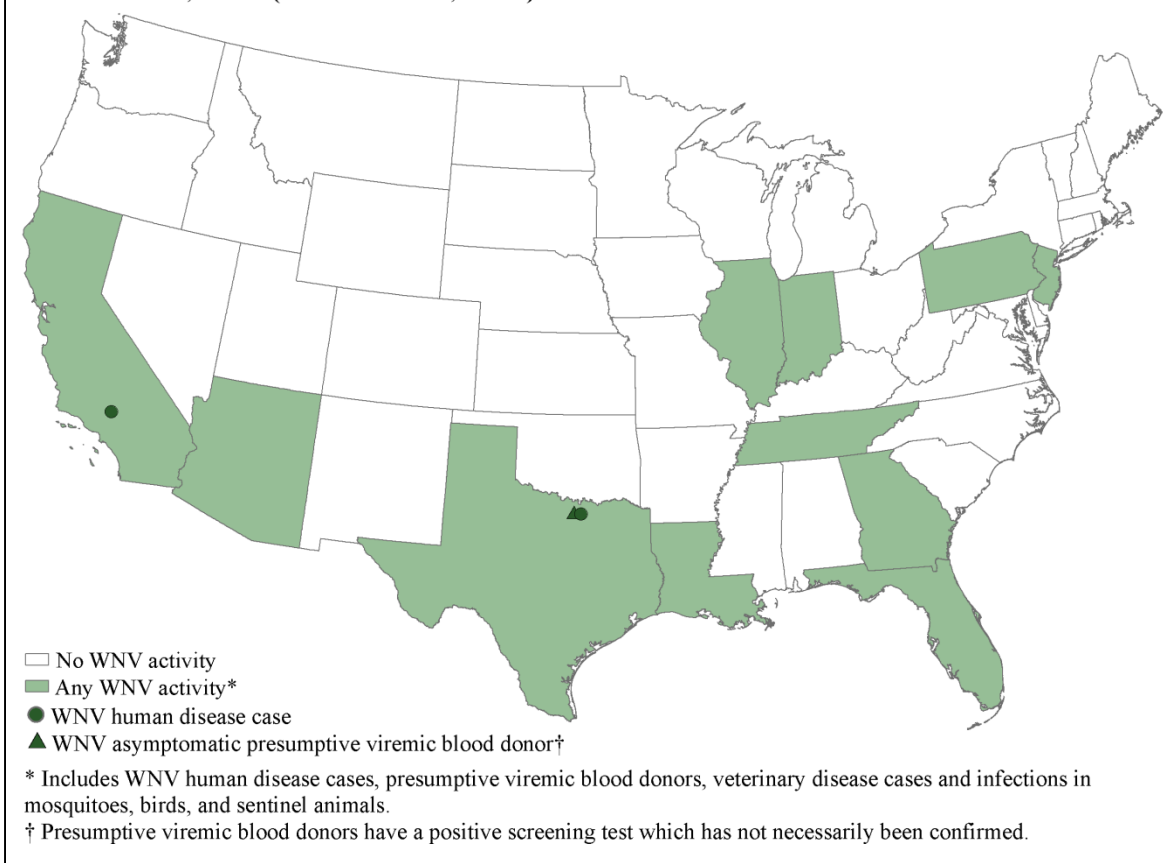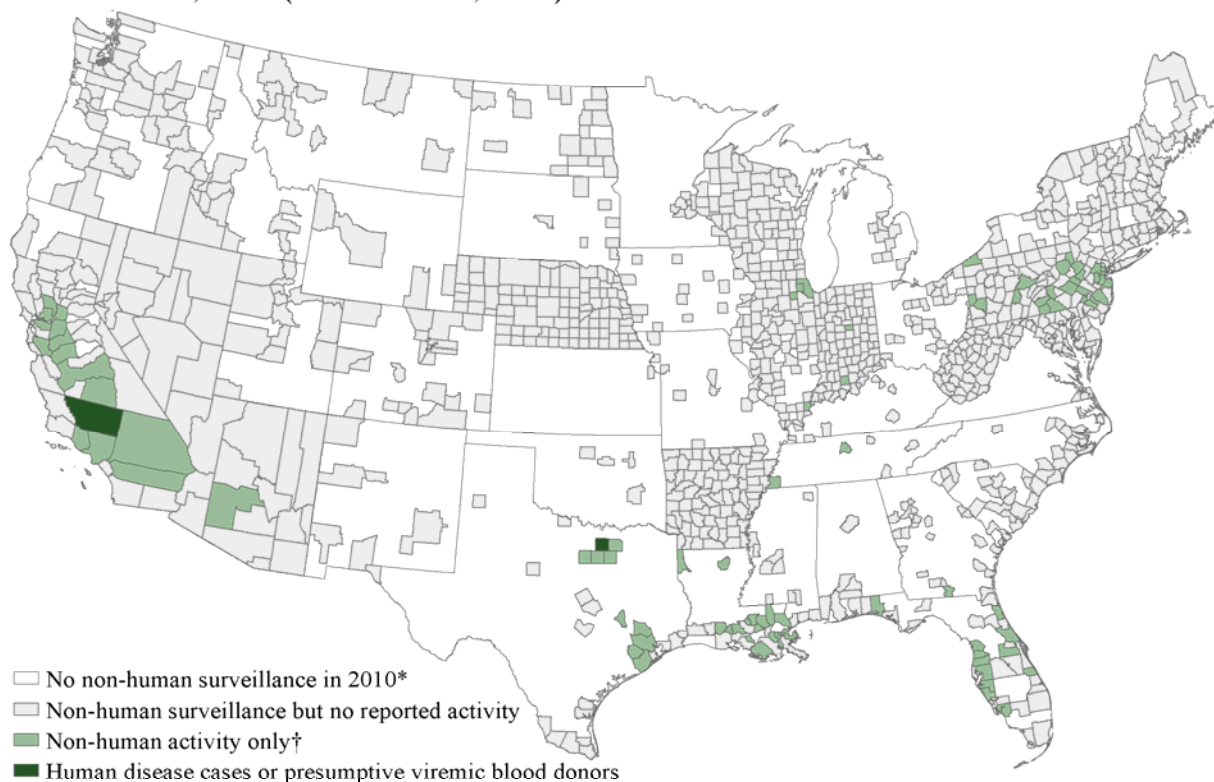
☐ No WNV activity
▨ Any WNV activity*
● WNV human disease case
▲ WNV asymptomatic presumptive viremic blood donor†

* Includes WNV human disease cases, presumptive viremic blood donors, veterinary disease cases and infections in mosquitoes, birds, and sentinel animals.
† Presumptive viremic blood donors have a positive screening test which has not necessarily been confirmed.

Figure 2. West Nile virus (WNV) activity reported to ArboNET, by county, United States, 2012 (as of June 19, 2012)

- ☐ No non-human surveillance in 2010*
- ☐ Non-human surveillance but no reported activity
- ☐ Non-human activity only†
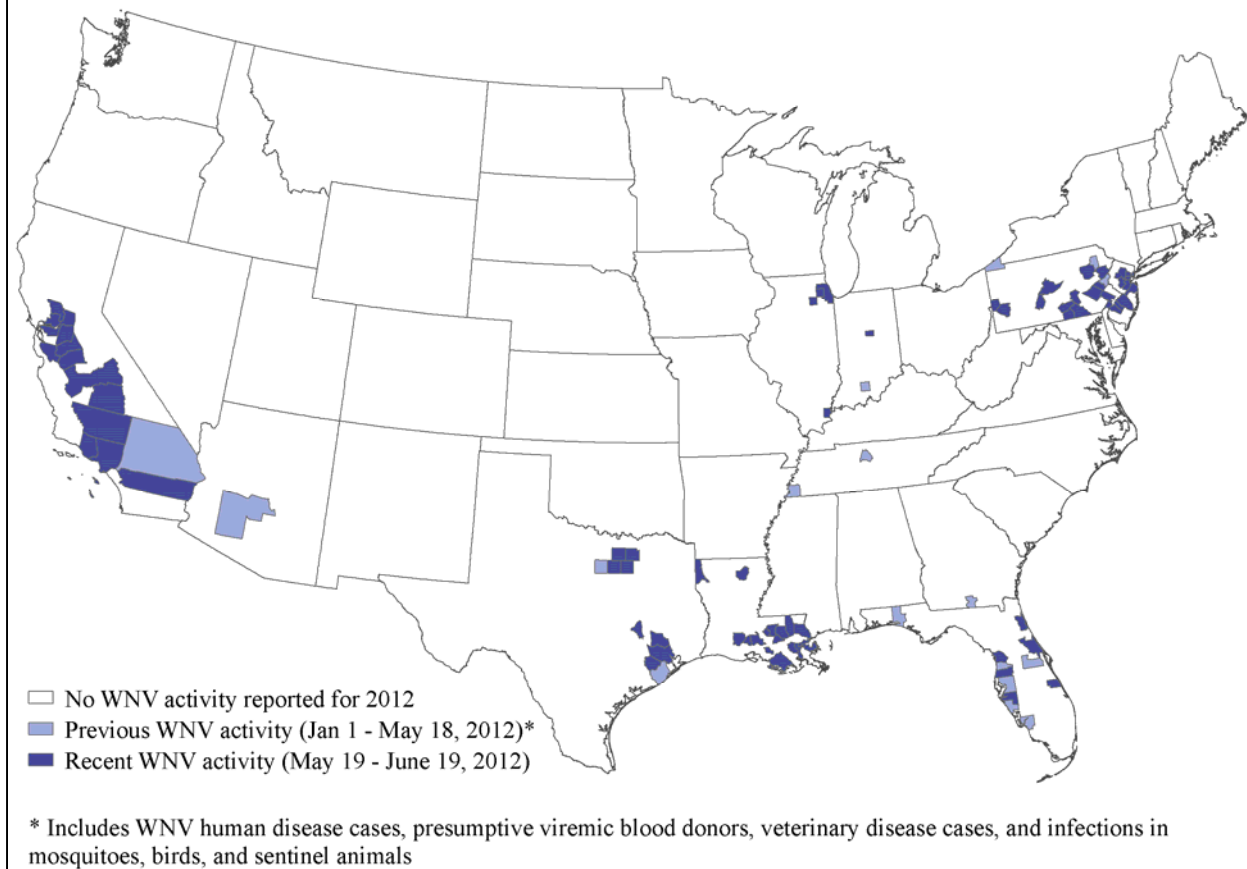- ☐ Human disease cases or presumptive viremic blood donors

* As reported by state health departments in a survey conducted in October 2010. Surveillance for human disease and presumptive viremic blood donors is performed in all counties.

† Includes WNV veterinary disease cases and WNV infections in mosquitoes, birds, and sentinel animals.

Recent WNV activity in 2012

During the past month (May 19 – June 19), WNV activity has been reported from 73 counties in eight states **[Figure 3]**.

Figure 3. West Nile virus (WNV) activity reported to ArboNET, by time period and county, United States, 2012 (as of June 19, 2012)

☐ No WNV activity reported for 2012
▨ Previous WNV activity (Jan 1 - May 18, 2012)*
■ Recent WNV activity (May 19 - June 19, 2012)

* Includes WNV human disease cases, presumptive viremic blood donors, veterinary disease cases, and infections in mosquitoes, birds, and sentinel animals

WNV human infections reported for 2012

Reported WNV disease cases
To date, two human WNV disease cases (one neuroinvasive and one non-neuroinvasive) have been reported from California and Texas.

Presumptive viremic blood donors
One WNV presumptive viremic blood donor has been reported from Texas.

Comparison to 2011 data
From January 1–June 21, 2011, there was one non-neuroinvasive human WNV disease case and zero presumptive viremic blood donors reported to ArboNET.

Eastern equine encephalitis virus (EEEV) activity in 2012

As of June 19th, 18 counties in five states reported EEEV activity in non-human species to ArboNET for 2012 **[Figure 4]**. To date, no human cases of EEEV disease have been reported. During the past month (May 19 – June 19), EEEV activity has been reported in four states (Florida, Louisiana, Mississippi, and New Jersey).

Figure 4. Eastern equine encephalitis virus (EEEV) activity reported to ArboNET, by state, United States, 2012 (as of June 19, 2012)

☐ No EEEV activity
☐ Any EEEV activity*
● EEEV human disease case

* Includes EEEV human disease cases, veterinary disease cases, and infections in mosquitoes, birds, and sentinel animals.

La Crosse virus (LACV) activity in 2012
As of June 19th, no states have reported LACV activity to ArboNET for 2012 **[Figure 5]**.

Figure 5. La Crosse virus (LACV) activity reported to ArboNET, by state, United States, 2012 (as of June 19, 2012)

☐ No LACV activity
☐ Any LACV activity*
● LACV human disease case

* Includes LACV human disease cases, veterinary disease cases, and infections in mosquitoes, birds, and sentinel animals.
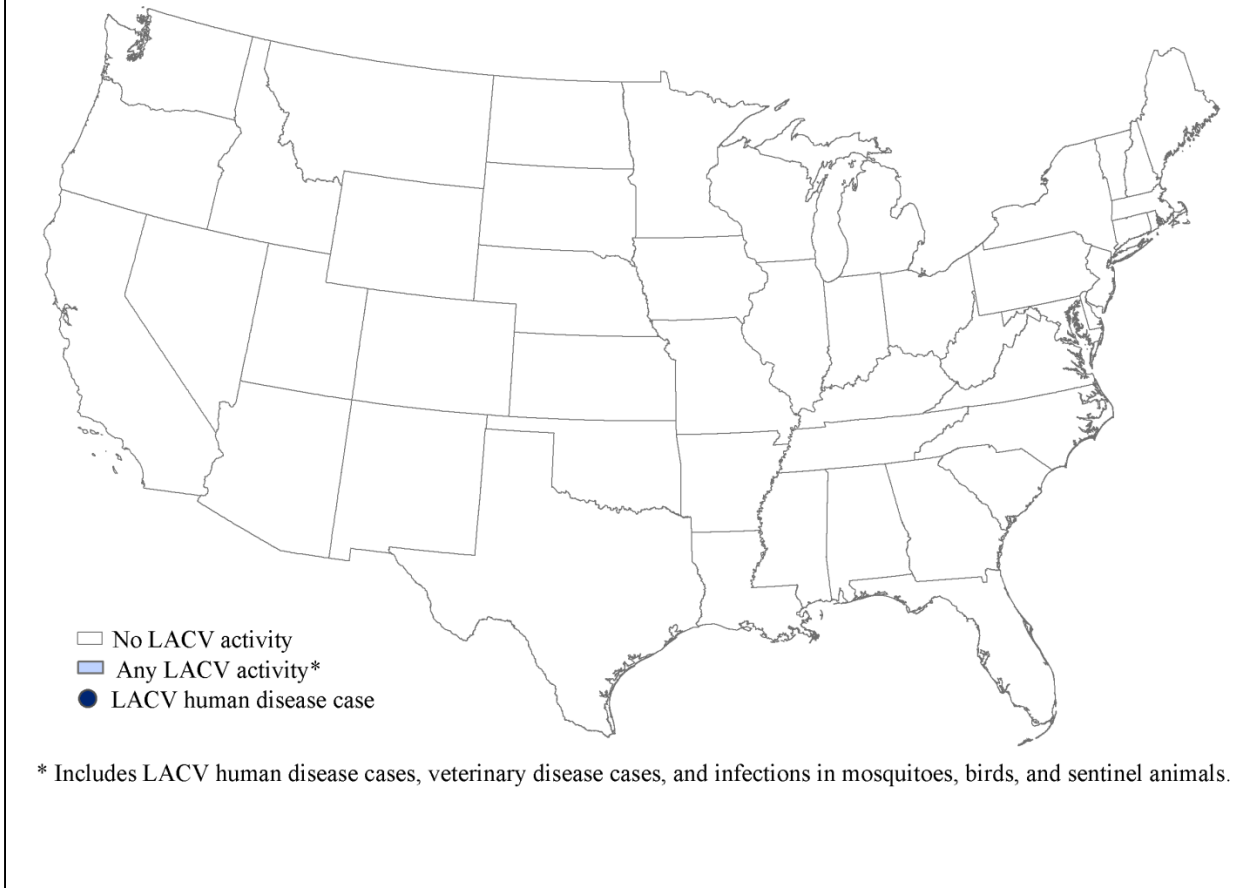
Powassan virus (POWV) activity in 2012

As of June 19th, two counties in one state (Minnesota) reported human cases of POWV disease in 2012 **[Figure 6 and Table 1]**. During the past month (May 19 – June 19), POWV activity has been reported in one state (Minnesota).

Figure 6. Powassan virus (POWV) activity reported to ArboNET, by state, United States, 2012 (as of June 19, 2012)
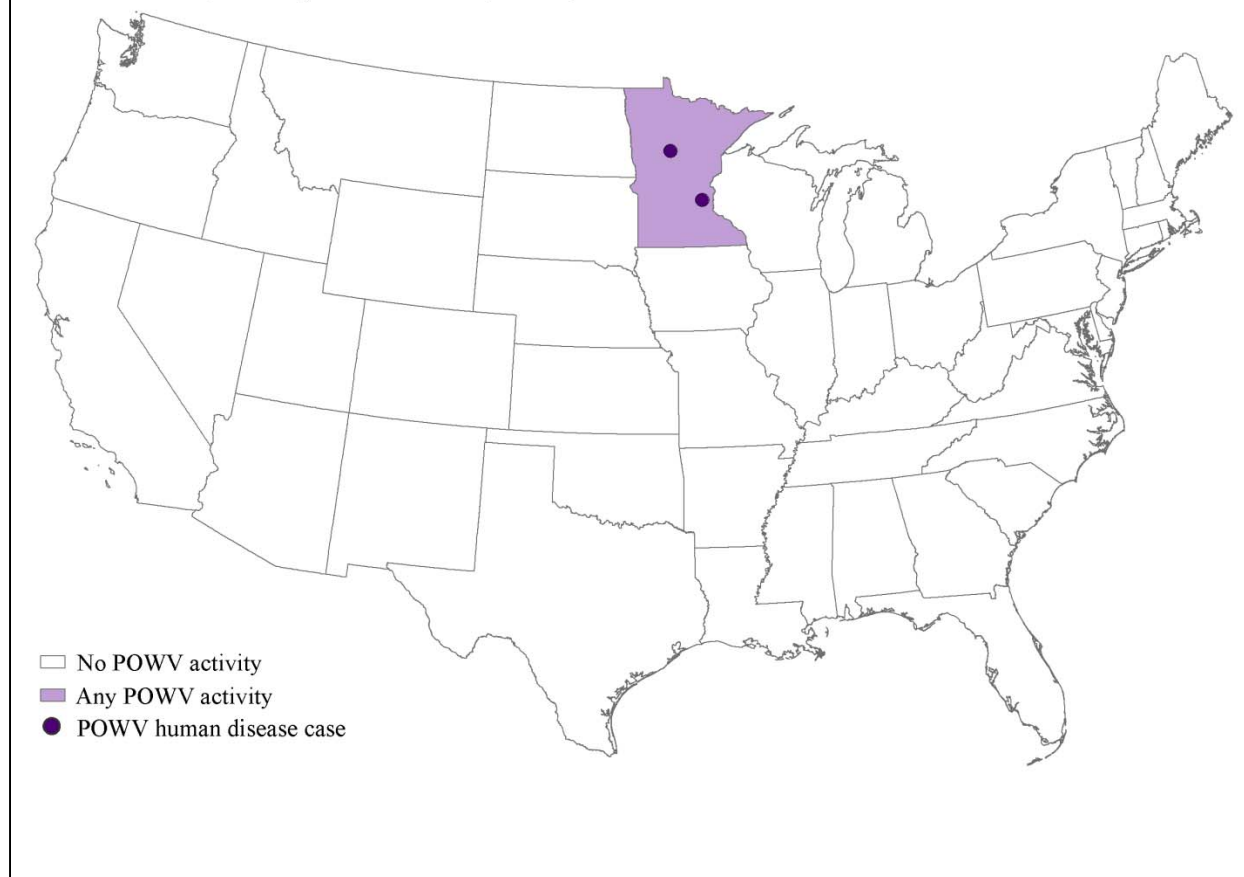

☐ No POWV activity
▨ Any POWV activity
● POWV human disease case

Table 1. Powassan virus (POWV) human disease cases reported to ArboNET, United States, 2012

	Neuroinvasive disease cases	Nonneuroinvasive disease cases	Total cases*	Deaths
Minnesota	2	--¶	2	--
Totals	**2**	**--**	**2**	**--**

*Includes confirmed and probable cases.
¶None reported.

St. Louis encephalitis virus (SLEV) activity in 2012

As of June 19th, two counties in one state (Florida) reported SLEV activity in non-human species to ArboNET for 2012 **[Figure 7]**. To date, no human cases of SLEV disease have been reported. During the past month (May 19 – June 19), SLEV activity has not been reported.

Figure 7. St. Louis encephalitis virus (SLEV) activity reported to ArboNET, by state, United States, 2012 (as of June 19, 2012)

☐ No SLEV activity
☐ Any SLEV activity*
● SLEV human disease case

* Includes SLEV human disease cases, veterinary disease cases, and infections in mosquitoes, birds, and sentinel animals.

About ArboNET

ArboNET is a national arboviral surveillance system managed by CDC and state health departments. In addition to human disease, ArboNET maintains data on arboviral infections among presumptive viremic blood donors (PVDs), veterinary disease cases, mosquitoes, dead birds, and sentinel animals. As with other national surveillance data, ArboNET data has several limitations that should be considered in analysis, interpretation, and reporting **[Box]**.

Box: Limitations of ArboNET data

The following should be considered in the analysis, interpretation, and reporting of ArboNET data:

1. ArboNET is a passive surveillance system. It is dependent on clinicians considering the diagnosis of an arboviral disease and obtaining the appropriate diagnostic test, and reporting of laboratory-confirmed cases to public health authorities. Diagnosis and reporting are incomplete, and the incidence of arboviral diseases is underestimated.

2. Reported neuroinvasive disease cases are considered the most accurate indicator of arboviral activity in humans because of the substantial associated morbidity. In contrast, reported cases of nonneuroinvasive arboviral disease are more likely to be affected by disease awareness and healthcare-seeking behavior in different communities and by the availability and specificity of laboratory tests performed. Surveillance data for nonneuroinvasive disease should be interpreted with caution and generally should not be used to make comparisons between geographic areas or over time.

3. Provisional ArboNET data are provided to help track recent arboviral disease activity. However, these data may change substantially before they are finalized. Provisional data from the current year should not be combined with or compared to final data from previous years.

Additional resources

For additional arboviral disease information and data, please visit the following websites:

- CDC's Division of Vector-Borne Diseases:
  www.cdc.gov/ncidod/dvbid/index.html

- National Notifiable Diseases Surveillance System:
  http://www.cdc.gov/osels/ph_surveillance/nndss/phs/infdis2011.htm

- U.S. Geological Survey (USGS):
  http://diseasemaps.usgs.gov/

- AABB (American Association of Blood Banks):
  www.aabb.org/programs/biovigilance/Pages/wnv.aspx